

CLAIMS

1. System for use of fuel cells in stationary/mobile devices with a stable/unstable load profile, comprising
 - 5 a) a fuel cell;
 - b) a buffer for storage of surplus energy, arranged to function as a regulating system between the fuel cell and the energy consumption unit;

characterised in that the system further comprises

 - 10 c) a dumping device for dumping of energy which is required to be led out of the system when the buffer is full or according to need;
 - d) an energy generator/converter for transforming the energy stored in the buffer to a required form of energy, at greater
15 energy need than the fuel cell can meet, or for transforming of energy which is not used and which shall be stored in another form, or for transforming of energy stored in the buffer which shall be dumped in another form.
- 20 2. System in accordance with claim 1, *characterised in* that the system comprises one or several of the following components:
 - a) several different/similar fuel cells;
 - b) several different/similar buffers;
 - c) several different/similar dumping devices;
 - 25 d) several different/similar converters;
 - e) several different/similar subsystems.
3. System in accordance with claim 1, *characterised in* that the buffer can be one or several of the following devices:
 - 30 a) a pressure boiler with fluid
 - b) a hydrogen storage unit with hydrogen.
4. System in accordance with claim 1, *characterised in* that the dumping device can be one or several of the following devices:

- a) a steam exhaust
- b) a condenser
- c) an evaporator
- d) a heating element

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5. System in accordance with claim 1, *characterised in* that the converter can be one or several of the following devices:

- a) an electrolysis unit
- b) a condenser
- c) a turbine
- d) a generator
- e) a gas burner
- f) a PEM cell (Proton Exchange Membrane)
- g) a heating element
- h) an evaporator

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6. System in accordance with claim 1, *characterised in* that it comprises one or several of the following subsystems:

- a) an air-flue gas circuit with turbine/compressor
- b) a boiler for heat recovery and additional heating
- c) a steam-condensate circuit with steam turbine
- d) a hydrogen circuit with electrolysis unit
- e) a hydrogen store and PEM cells
- f) a gas circuit with gas store and distribution system
- g) a distribution system for electric energy with turbine driven generator, panels and control system

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7. Method for use of the system in accordance with claim 1, *characterised in* that

- a) the energy which is produced by said fuel cells, and which is not used by the mentioned system, is stored in said buffer;

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- b) at the need of said system for more energy than the fuel cell can deliver momentarily, energy that is stored in the mentioned buffer is used;
- 5 c) energy which can not be stored in said buffer, or which is required to be removed momentarily, is dumped by way of said dumping device.
- d) energy which is required in another form is converted by way of said converter,
- 10 e) energy which is required to be transported to another part of the system is transported by way of said subsystem.